cingulate, middle frontal gyrus, basal ganglia) and memory (posterior cingulate). This finding forms a basis of selecting an appropriate set neuropsychologic battery to accurately evaluate cognitive effects of microemboli.

Disclosure: The content was partially presented as a poster in Human Brain Imaging 2009.

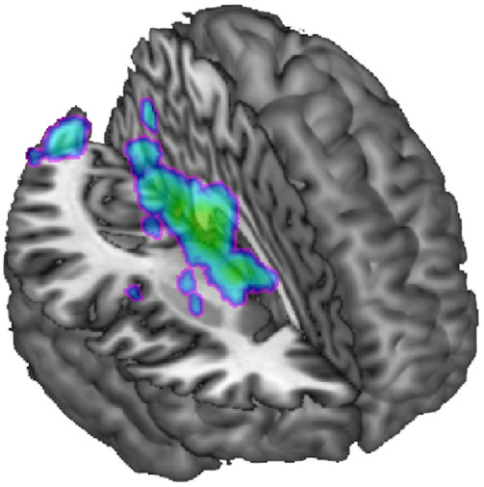

Fig. Regions vulnerable to microemboli

Contemporary Management of Aberrant Right Subclavian Arteries

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Background: Aberrant origin of right subclavian arteries represents the most common of the aortic arch anomalies. This variant has few published series to guide management. Our goal was to review treatment options and results for these potentially complex reconstructions.

Methods: A retrospective review was performed on all patients with the diagnosis of aberrant right subclavian artery at our institution from January 2003 through July 2009.

Results: Nineteen patients, comprising one of the largest series reported, including 9 males and 10 females (mean age, 40.6 years; range, 7-77), were diagnosed with an aberrant right subclavian artery. The diagnosis was incidental in 14 (74%), but 5 (26%) had symptoms of dysphagia or upper extremity ischemia, or both. The diagnosis was established by computed tomography in 15 patients (79%), by magnetic resonance imaging in 3 (15%), and by standard angiography in 1 (5%). The most common associated anomaly was a Kommerell's diverticulum (KD), which was found in five patients (26%), all of whom required intervention for symptoms or aneurysmal degeneration. Intervention was performed in 10 patients (53%), including carotid subclavian bypass in 5 (50%), carotid subclavian transposition in 3 (30%), and ascending aorta to subclavian bypass in 2 (20%). Four patients (40%) had additional intervention for management of aneurysmal disease of the aorta or KD, with open aortic replacement in two (20%) and aortic endografting in two (20%). There was one perioperative death (10%) in a patient undergoing aortic arch debranching with placement of an aortic endograft. Eighteen patients were alive without symptoms after a mean follow-up of 38 months.

Conclusions: Aberrant right subclavian arteries are most commonly found incidentally with computed tomography. The presence of a KD appeared to correlate with the need for intervention. Patients with no symptoms with the absence of a KD can safely be followed.

Clinical Outcomes and Implications of Failed Infrainguinal Endovascular Stents

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Objective: Although the influence of initial TASC II classification has been clearly shown to influence the primary patency of infrainguinal stenting procedures, its effect on outcomes once stent failure has occurred is less well documented. It is the objective of this paper to determine whether clinical outcomes and implications of anatomic stent failure vary according to initial TASC II classification

Methods: Results were analyzed by TASC II classification. Kaplan-Meier survival curves were plotted, and differences between groups tested by log-rank method. A Cox proportional hazards regression model was used to perform the multivariate analysis

Results: During a 5-year period, 239 angioplasties and stents were performed in 192 patients. Primary patency was lost in 69 stented arteries. Failure was due to one or more hemodynamically significant stenoses in 43 patients and occlusion in 26. After primary stenting, limbs initially classified as TASC C and D were more likely to fail with occlusion ($P < .0001$), require open operation ($P = .032$), or lose runoff vessels ($P = .0034$) than those classified as TASC A or B. In two patients initially classified as TASC C, stent failure changed the level of the open operation to a more distal site. Percutaneous reintervention was performed on 35 limbs. Successful reintervention improved the patency of TASC A and B lesions to 92%, 85%, and 64% and TASC C and D lesions to 78%, 72%, and 50% at 12, 24, and 36 months, respectively. Initial TASC classification was highly predictive of first anatomic failure ($P < .0001$) but did not predict the durability of subsequent catheter based reintervention ($P = .32$). Ten patients with stent failure required operation, and five underwent amputation; all had failed with occlusion. Overall limb salvage was 89% and periprocedural mortality was 0.4%.

Conclusions: After primary stenting of the SFA and popliteal artery, lesions classified as TASC C or D are more likely to fail with occlusion, lose runoff vessels, and alter the site of subsequent open operation than their TASC A and B counterparts. Although these complications are infrequent, they may negatively impact later attempts at revascularization and this must be considered when deciding on the proper treatment strategy for patients with infrainguinal occlusive disease.

Intraoperative Thrombolysis and Laser Atherectomy: Effective Treatment for TASC C and D Lesions in Critical Limb Ischemia

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Objective: We postulate that catheter-directed intraoperative thrombolysis in conjunction with laser atherectomy is a safe and effective treatment of TASC C and D critical limb ischemia.

Methods: We retrospectively analyzed 411 patients who underwent 670 percutaneous, lower extremity interventions from September 2004 to October 2009. Indications for intervention were limb salvage (98.7%) and claudication (1.3%). TASC C lesions were present in 40.9% of patients and TASC D lesions in 59.1%. Gender was 51.0% male and 49.0% female. Average age was 69.5 ± 12.0 years (range, 30-97 years). Risk factors included hypertension (87.8%), diabetes (70.2%), coronary artery disease (56.4%), tobacco abuse (54.8%), hyperlipidemia (49.4%), COPD (36.6%), congestive heart failure (26.3%), renal insufficiency (23.7%), history of myocardial infarction (21.3%), history of TIA or CVA (20.0%), atrial fibrillation (16.6%), dialysis (16.0%), morbid obesity (14.9%), arrhythmia (7.3%), and pacemaker (6.1%). All procedures involved catheter-directed arterial infusion of 2 to 10 mg of tissue plasminogen activator into the lesion and laser atherectomy: 647 extremities required balloon angioplasty, and 326 extremities required stenting. Technical success required completion of the intended procedure. Clinical success required no deaths, strokes, myocardial infarctions, bleeding requiring transfusion, thromboemboli, infection, respiratory complications, or reinterventions within 30 days. Follow-up was at 24 hours, 30 days, 6 months, and then every 6 months. Kaplan-Meier analysis was used for patency, limb salvage, and survival rates.

Table. Patency, limb salvage, and survival rates

	1 Mon (%)	*3 Mon (%)*	*6 Mon (%)*	*12 Mon (%)*	*24 Mon (%)*	*48 Mon (%)*
Primary	89.5	79.6	66.4	50.4	43.3	26.5
Primary assisted	91.5	82.2	71.0	59.3	51.7	35.8
Secondary	94.9	90.0	84.3	82.6	78.0	71.2
Limb salvage	96.3	92.7	88.7	86.7	81.3	74.5
Survival	96.7	89.9	86.1	78.6	69.9	62.4